Patent Claims

1. A handle section (1) of an electric dental cleaning or brushing device (1, 2), with a coupling section for coupling a brushing or cleaning tool (2) thereto, particularly a brush attachment, with a drive mechanism (23) for driving the coupled brushing or cleaning tool, and with a control device (27) for controlling the drive mechanism, **characterized in that** the control device (27) possesses an interlock device (100) which is deactivatable by an interlock canceling element (7) provided in particular and preferably on the cleaning tool.

2. The handle section as claimed in claim 1, **characterized in that** the interlock device (100) is deactivatable or deactivated by the interlock canceling element (7) when the cleaning tool is coupled to the handle section.

3. The handle section as claimed in any one of the preceding claims 1 or 2, **characterized in that** the control device (27) includes an encoding detection device (5) for detecting an encoding of the interlock canceling element (7) of the attached cleaning tool (2), and that the interlock device (100) is deactivatable in response to a signal from the encoding detection device (5).

4. The handle section as claimed in any one of the preceding claims, wherein provision is made for a switch on the handle section (1), preferably an on-off switch of the drive mechanism (23), for activation of the encoding detection device (5), said drive mechanism (23) being adapted to be turned on upon a positive response of the encoding

detection device (5) or upon deactivation of the interlock device (100).

5. The handle section as claimed in any one of the preceding claims, **characterized in that** the interlock device (100) operates electronically.

6. The handle section as claimed in any one of the claims 3 to 5, **characterized in that** the encoding detection device (5) is of the noncontacting type.

7. The handle section as claimed in any one of the claims 3 to 5, **characterized in that** the encoding detection device (5) is actuatable mechanically.

8. The handle section as claimed in claim 7, **characterized in that** the encoding detection device (5) includes at least one movable and/or elastically deformable sensing element (17) adapted to be moved and/or deformed by an encoding of the cleaning tool (2), and produces a signal characteristic of in particular the movement and/or deformation.

9. The handle section as claimed in claim 8, **characterized in that** the sensing element (17) is constructed as an electrical contact member.

10. The handle section as claimed in any one of the preceding claims, **characterized in that** a probe element of the encoding detection device (5) is movably, preferably displaceably, mounted and has an engagement surface (56) for engagement with a corresponding actuating surface (55) of a cleaning tool (2).

11. The handle section as claimed in claim 10, **characterized in that** the engagement surface mates with the actuating surface of the cleaning tool (2) such that on coupling engagement of the cleaning tool (2) with the handle section the probe element is moved by an amount predetermined by the actuating surface (55), and that the encoding detection device (5) includes a motion sensor (17; 57), for example, a switch, for detecting the movement of the probe element.

12. The handle section as claimed in claim 10 or 11, **characterized in that** the probe element is formed by a drive shaft (28) mounted preferably in longitudinally displaceable fashion.

13. The handle section as claimed in any one of the preceding claims 11 or 12, **characterized in that** the motion sensor is a probe element (57), for example, a switch, according to claim 8 or 9.

14. The handle section as claimed in any one of the preceding claims, **characterized in that** the encoding detection device (5) includes a signal receiver (20) for receiving an encoded signal from the cleaning tool (2), particularly from the interlock canceling element (7), and/or a signal transmitter (20) for transmitting a signal, particularly an interrogation or activation signal, to the coupled cleaning tool (2), in particular the interlock canceling element (7).

15. The handle section as claimed in any one of the preceding claims, **characterized in that** the encoding detection device (5) includes an optical sensor (12; 13; 15) for detecting an optical encoding of the respective cleaning tool

(2) attached, particularly the interlock canceling element (7).

16. The handle section as claimed in any one of the preceding claims, **characterized in that** the encoding detection device (5) includes a magnetic sensor (6; 9; 10) for detecting a magnetic encoding of the respective cleaning tool (2) attached, particularly the interlock canceling element (7).

17. The handle section as claimed in any one of the preceding claims, **characterized in that** the encoding detection device (5) includes a sensor (9), in particular a circuit or the like, for detecting a metallic and/or electromagnetic encoding of the respective cleaning tool (2) attached, particularly the interlock canceling element (7).

18. The handle section as claimed in any one of the preceding claims, **characterized in that** the encoding detection device (5) includes a capacitive sensor (21) for detecting a capacitive encoding of the respective cleaning tool (2) attached, particularly the interlock canceling element (7).

19. The handle section as claimed in any one of the preceding claims, **characterized in that** the encoding detection device (5) includes an electrical sensor for detecting an electrical encoding of the respective cleaning tool (2) attached, particularly the interlock canceling element (7).

20. The handle section as claimed in any one of the preceding claims, **characterized in that** the encoding detection device (5) is arranged in a closed, in particular fluid-tight handle housing (26).

21. The handle section according to the prior art portion of claim 1 or any one of the preceding claims, **characterized in that** the interlock canceling element (7) for deactivation of an interlock device (100) of the handle section (1) is associated with the handle section itself, being in particular fastened to or in the handle housing (26).

22. The handle section as claimed in claim 21, **characterized in that** a drive shaft (28) of the handle section (1) is provided as interlock canceling element (7) as by magnetization.

23. A brushing or cleaning tool, in particular a brush attachment, with a coupling section to effect coupling to a handle section (1) of an electric dental cleaning device, **characterized by** an interlock canceling element (7) for deactivation of an interlock device (100) of the handle section (1).

24. The cleaning tool as claimed in claim 23, **characterized in that** the interlock canceling element (7) includes an encoding device or acting member or is configured as an acting member having in particular a magnetic, electrical, capacitive, electromagnetic, optical and/or mechanical encoding function or acting function.

25. The cleaning tool as claimed in claim 23 or 24, **characterized in that** the interlock canceling element includes a signal receiver for receiving a signal from the handle section (1) and/or a signal transmitter for transmitting an interlock deactivating signal to the handle section (1), in particular a smart transponder chip (19).

26. The cleaning tool as claimed in claim 25, **characterized in that** the signal receiver and/or the signal transmitter, in particular coils (44, 45), are assigned encoding elements for encoding the received signal.

27. The cleaning tool as claimed in any one of the preceding claims 23 to 26, **characterized in that** the interlock canceling element possesses an encoding body, particularly a shaped body, which is fixedly connected to the body of the cleaning tool and arranged and configured so as to be positioned in the range of detection of an encoding detection device (5) of the handle section (1) when the cleaning tool (2) and the handle section (1) are in coupled condition.

28. The cleaning tool as claimed in any one of the preceding claims 23 to 26, **characterized in that** provision is made for at least one actuating section as interlock canceling element, which on coupling of the cleaning tool (2) to the handle section (1) actuates a probe element (28) or a sensing element (17; 57) on the handle section (1), particularly by moving and/or deforming it by a predetermined degree and/or in a predetermined direction and/or exerting a predetermined force thereon.

29. The cleaning tool as claimed in any one of the preceding claims 23 to 28, **characterized in that** as actuating section an actuating surface (55) is provided, in particular a pressure application surface, an abutment or the like, which registers with a corresponding engagement surface (56) or mating abutment associated with the probe element (28) or sensing element of the handle section (1) in such manner that on coupling of the cleaning tool (2) to the handle section the engagement surface (56) on the handle section is moved by

a predetermined amount and/or in a predetermined direction and/or is acted upon by a predetermined force.

30. The cleaning tool as claimed in any one of the preceding claims 23 to 29, **characterized in that** the interlock canceling element (7) is configured in such manner that preferably a section of a drive shaft (49) in the cleaning tool cooperates with a drive shaft (28) of the handle section (1).

31. The cleaning tool as claimed in any one of the preceding claims 23 to 30, **characterized in that** the interlock canceling element (7) includes at least one magnetic field effecting member or encoding body (8) which is arranged preferably in the area of a coupling end of the cleaning tool (2).

32. The cleaning tool as claimed in any one of the preceding claims 23 to 30, wherein the interlock canceling element (7) includes at least one dielectrically acting member or encoding body (8) which is arranged preferably in the area of a coupling end of the cleaning tool (2), being constructed to protrude beyond the end in particular in the direction of the coupling motion.

33. The cleaning tool as claimed in any one of the preceding claims 23 to 32, wherein the interlock canceling element (7) includes an optical waveguide (37) communicating with a light entrance opening (38) and a light exit opening (39) provided preferably in the coupling end of the body of the cleaning tool.

34. The cleaning tool as claimed in any one of the preceding claims 23 to 33, **characterized in that** the interlock canceling element (7) is an integral part of the body of the cleaning tool.

35. The cleaning tool as claimed in any one of the preceding claims 23 to 34, wherein the interlock canceling element (7) is connected to the body of the cleaning tool preferably releasably.

36. The cleaning tool as claimed in claims 33, wherein the interlock canceling element (7) is integrated in a ring (8) arranged at a coupling end of the cleaning tool, being in particular snap-fittable to the body of the cleaning tool by positive engagement therewith.

37. An electric dental cleaning device, in particular toothbrush, with a handle section (1) in combination with a cleaning tool (2) adapted to be coupled thereto, each according to one or several of the preceding claims.

38. An electric dental cleaning device, in particular toothbrush, with a handle section (1) according to any one of the preceding claims 1 and 21 and/or 22 in combination with a cleaning tool (2) adapted to be coupled thereto, said tool being compatible with the handle section (1) but having no interlock canceling element (7).